

NEW STRATEGIES AND DIRECTIONS FOR FOOD DATABASES

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ABSTRACT

This presentation will address two key facts related to today's food databases: (1) Food databases are increasingly being used to fulfill a variety of regulatory requirements, establish public health policies, set standards for health care and feeding programs, and establish research priorities; and (2) More "reliable" information is needed for input into food databases to ensure conclusions reached from their use are scientifically accurate and justified. In view of these facts, several strategies and directions for improving the usefulness and reliability of food databases will be discussed. Points for consideration from a policy and philosophical perspective will include: the need for a uniform federal policy; the need for an "omnibus" database with different quality characteristics; the need to include non-nutrient data; the need for improving data acquisition; and the need to raise the priority for a national database to a higher level.

Good Morning. I want to begin by stating it is a privilege to be here with you today, giving the opening key note address for this year's conference. And I'd be remiss if I did not personally thank David Haytowitz for extending the invitation to me, while I was on maternity leave from NFPA, and so sleep deprived I didn't know what I was agreeing to do—

I say this—partly in jest—because I do indeed look upon the invitation as a privilege, but I also say this with a hefty dose of reality, because I am in no way shape or form an expert in database development, be they nutrient, consumption, pesticide, heat penetration or any other.

Based on my work experience, I fall more readily into the "user" category, than the "developer" category. Nevertheless, from my perspective as a user of databases, I have identified several challenges that require new strategies and directions for resolving. The three challenges which I hasten to add will not be addressed by me today include:

- Weak statistical methodologies—Better statistical methods are needed for acquiring data, standardizing data, analyzing data and using data. And I refer to data from both food composition and intake surveys—which together are the bases for dietary assessment and public health recommendations dealing with diet and health;

Which leads us to challenge #2:

- Variation in data due to inadequacies in measurement tools—which raises bigger issues, specifically in regard to extrapolating from a specific day or days to what is "typically" consumed over an extended period; or problems inherent when extrapolating from a random sample to an entire population;

And lastly challenge #3:

- Weaknesses inherent in approximations—which because of the strong probability for imprecise estimates may result in failure to detect individuals at risk, both individuals at risk for over and under consumption.

I realize it is bad form to begin a speech by listing the items that won't be addressed. However, the opportunity to present what is needed to a roomful of individuals more than qualified to develop the strategies and directions to get the answers was more than I could pass up.

So I will leave discussion of new directions and strategies for solving the problems specific to today's databases to the experts in the database development. Instead, the focus of my talk today will be identifying where new strategies and directions are needed to reach a particular goal designed to ensure today's food composition databases are better able to meet the demands of the 21st century. And as stated in the abstract, these goals or points for consideration are more of a policy and philosophical nature.

The background information and the choice in terminology represents the views of the NFPA and the experts on staff who are responsible for the developing and maintaining of our food composition databases, primarily Dr. Roy Lyon, Director of our food chemistry and packaging department, who has spoken at past Conferences (in fact, as recently as last year). We feel we are entitled to our views-based on the number of databases we have developed, which total over 25. All fall into the category of "commodity" databases, which I will discuss momentarily, and all have received interim approval from FDA, and continue to be upgraded and expanded.

Because of NFPA's uniqueness as the science based trade association for the processed food industry, we rely on the data we generate to support various regulatory and/or legislative policy initiatives. To achieve sound public policy, you must have as your base sound scientific principles and information. NFPA advances no policy without having up-front a strong scientific argument.

I'll digress for one moment here to provide one example--germane to this topic—since it involves our databases which constitute the sound scientific information and advancing sound public policy, in this instance use of the term "healthy". As many of you know, FDA published a final rule defining "healthy" as a claim for nutrition labeling. In this final rule, raw fruits and vegetables were permitted to use the term "healthy" and certain processed fruits and vegetables were excluded.

In June 1994, NFPA, using the sound scientific information accumulated on the nutrient content of various processed fruits and vegetables, filed with FDA a petition for reconsideration. We argued that the final rule was not logical based on the facts, and that FDA should delete the single word "raw" from the healthy rule, and thereby extend the use of the claim to all fruits and vegetables.

On February 12, 1996, FDA published a proposed rule to amend the "healthy" definition by extending the use of the term to single ingredient frozen fruits and vegetables, and to enriched cereal products conforming to standards of identity. FDA denied NFPA's petition for reconsideration, but indicated a willingness to consider extending the use of the term "healthy" to other single ingredient processed fruits and vegetables (i.e., commercially sterile), provided it receives appropriate data supporting the positive nutritional profiles of other forms of processed fruits and vegetables.

We guarantee this information will be submitted to FDA by the July 18 deadline for comments. Far be it for NFPA to remind FDA that they already have the data since it was necessary they review the nutrient data for our databases before giving us interim approval. Digression over.

As most of you know, there are two types of nutrient databases. The first type is commodity databases, or whole food databases. These databases are typically derived from chemical analysis of the food so that the effect of processing is automatically accounted for. The NFPA databases are commodity databases.

The second type of database, what we refer to as “recipe calculating databases”, are databases consisting of nutrient data of the ingredients used in formulated foods. Nutrient profiles of foods are calculated from their ingredients, data which come from the commodity databases. We believe, when used appropriately, ingredient-type databases generate nutrition label information that correlates very closely with laboratory-generated data, though more work is needed to demonstrate this point to FDA.

Let’s review the driving forces behind food composition databases. With the advent of NLEA, nutrient database popularity increased, due primarily for a need for a less resource intensive means of labeling products. In addition to the economic benefit databases provide, it is also true that pooling information on a particular food, which is what databases do, increases the accuracy of the information. This we must all agree is better for the consumer.

The ability for databases to assist industry in their reformulating of old and their development of new products was also a driving force—specifically as it related to reducing time requirements and other important resources. Food labeling databases enable processors to develop unified labels for single ingredient type products or commodity products. Such use reduces consumer confusion since for example, all peas have the same information. In addition, competitiveness in the private label industry is enhanced since distributors can source product from multiple manufacturers without fear of compliance issues.

The impact on public health needs also constituted a major driving force for databases. Food composition databases together with databases containing information on dietary intake and lifestyle characteristics are used to identify current and emerging biomedical issues; set standards of care, be they for the elderly, infants, or other subpopulations which may fall into the at-risk category; and to generate hypotheses needed to set national research priorities or to revisit and rethink current public health recommendations as they relate to diet and health.

Having completed the overview and brief review of the driving forces behind food composition databases, it is time to address the issues confronting today’s food databases for which new strategies and directions are needed. First and foremost, new strategies and directions are needed to ensure that a uniform federal policy on databases is promulgated. The reasons for this are numerous, but I think the one phrase, “for purposes of efficiency, reliability and accuracy” best sums it up. It makes no sense to operate under the two agency approach.

New strategies and directions are needed to obtain more reliable food consumption data in order to better assess the nutrient adequacy of diets in the US population. In this regard more concentration is needed on targeting the data collection as well as improving the collection methodology.

A more flexible database structure is needed in order to increase use and participation. A sure way to increase the probability that this occurs is to provide data entry which is flexible and a system that is user friendly. In addition, a database with increased flexibility will allow for the addition of more information, such as levels of polyphenols and other non-nutrients, which have important biological activity and need to be assessed. It goes without saying that the addition of more data from a variety of sources will require the data be given a quality indication so the users of such data are aware of the data’s strengths as well as weaknesses.

New strategies and direction are needed to stress the benefit of a central repository and the need to improve the means by which data are collected, organized and distributed. A central repository carries with it benefits similar to that underlying a uniform federal policy for databases—efficiency, reliability and accuracy. The importance of databases and the need for increased participation, particularly by industry, needs to be better communicated—and communicated to a broader audience in order to get the support needed. And last but not least, the manner by which the data are collected, organized and distributed needs to be user friendly.

NFPA had similar problems in collecting, organizing and distributing its nutrient data. What we did was raise the importance of the databases not only in-house, but more importantly, with our members; we then trained the appropriate people and established a standard operating procedure to ensure members submitted data in a manner that was as painless as possible...or I should say as user friendly as possible. If we didn't make the necessary changes we would not have expanded as successfully as we have. Asking for too much information or requiring data submission be cumbersome and complex does not make for willing participants.

NFPA is not the only one who had to implement changes. I believe USDA in the development and maintenance of the Nutrient Standard Planning database also had to change its procedures in order to increase participation and strengthen the database.

And the last issue confronting food databases is money. More money for food composition research is needed—this is the strategic goal—the strategy and direction to achieve, a challenge to all of us. But the need is absolutely essential if we are to address or at least keep abreast with changing and emerging consumption trends, maintaining and increasing the quality of existing information and obtaining more information specifically in regard to processing factors.

I realize I have not given you specific answers for how to improve databases. Rather my intent this morning was to leave you with some thoughts on where new strategies and directions are needed to improve today's nutrient databases. When I think about it, my job this morning was easy. Simply put, I provided examples of where and why new strategies and directions for food databases are needed. It's easy to identify what is needed--where we want to be, if you will. The difficult job is knowing how to get there—developing the strategic plans, implementing them and achieving the strategic goals. Most of you have the knowledge and expertise to work together to do this--to help us, database users, get to where we need to be.

Simply put, people like me can identify in part what is needed, but it's people like you with your knowledge and commitment that will make these needs reality. As both a user of databases and a consumer who benefits from their use, I thank you, the audience, the active participants involved in these conferences and this area of key scientific study for where we are today.

And in closing, I thank you in advance for your dedication and continued hard work in identifying, developing and implementing the new strategies and directions needed to improve today's databases for tomorrow's uses.

This is the 21st Conference--it has achieved legal, adult status. May the next 21 years be even more productive than the last.

Thank you.